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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,576	09/30/2003	Haitao Wu	59864.00098 (NC31519)	7887

32294 7590 02/22/2007  
SQUIRE, SANDERS & DEMPSEY L.L.P.  
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TYSONS CORNER, VA 22182

EXAMINER
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NANO, SARGON N

ART UNIT	PAPER NUMBER
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2157

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/676,576

Applicant(s)

WU ET AL.

Examiner

Sargon N. Nano

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/04, 9/06</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is responsive to application filed on Sep. 30, 2003. Claims 1 – 28 are pending examination.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 8, 15, 16 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to mathematical operations without some practical application.

Claims 17, 22 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts. The use of a computer has not been indicated.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Kloth et al. U.S. Patent No. 6,643,260 (referred to hereafter as Kloth).

Kloth teaches a method and apparatus for implementing a quality of service policy in a data communication network (see abstract).

As to claim 1, Kloth teaches a method, comprising:

receiving a packet (see col.6, lines 39 – 51 and fig. 2, block number 60, Kloth discloses packets arriving as input queue);

determining a number of tokens in a token bucket (see col. lines 18 – 20, Kloth discloses a token bucket algorithm employed on counter)

calculating a probability for marking the received packet with a precedence level when the number of tokens in the token bucket are between a first threshold and a second threshold (see col. 7 lines 23 – 36, Kloth discloses the probability of dropping packets that falls outside the high and low threshold).

As to claim 2, Kloth teaches the method of claim 1, further comprising marking the packet with a high precedence level if the number of tokens exceeds a first threshold (see col.7 lines 51 – 65).

As to claim 3, Kloth teaches the method of claim 1, further comprising marking the packet with a low precedence level if the number of tokens is less than a second threshold, wherein the second threshold is lower than the first threshold (see col. 7 line 66 – col. 8 line 5).

As to claim 4, Kloth teaches the method of claim 1, further comprising marking the packet with a low precedence value or a high precedence value based on the

calculated probability when the number of tokens in the token bucket are between the first and second thresholds (see col. 7 lines 24 – 43).

As to claim 5, Kloth teaches the method of claim 4, wherein the probability of marking the received packet with a low precedence is lowered when a previously received packet was marked with a low precedence (see col. 9 lines 5 – 16).

As to claim 6, Kloth teaches the method of claim 1, wherein the number of tokens in the token bucket are inversely proportional to the amount of network traffic (see col.9 lines 52 col. 10 line 9).

As to claim 7, Kloth teaches the method of claim 6, wherein the probability of marking the received packet with a low precedence is inversely proportional to the number of tokens in the token bucket (see col.9 lines 52 – col. 10 line 9).

As to claim 8, Kloth teaches a packet marking system, comprising:  
a receiving engine capable of receiving a packet for marking; a marker engine, communicatively coupled to the receiving engine, capable of determining the number of tokens in a token bucket (see col.6 lines 39 – 51 and col.3, lines 18 - 30); and

a probability engine, communicatively coupled to the marker engine, capable of calculating a probability for marking the received packet with a precedence level when the number of tokens in the token bucket are between a first threshold and a second threshold (see col. 7 lines 23 – 36).

As to claim 9, Kloth teaches the system of claim 8, wherein the marker engine is further capable of marking the packet with a high precedence level if the number of tokens exceeds a first threshold (see col.7 lines 51 – 65).

As to claim 10, Kloth teaches the system of claim 8, wherein the marker engine is further capable of marking the packet with a low precedence level if the number of tokens is less than a second threshold, wherein the second threshold is lower than the first threshold (see col.7 lines 66 – col. 8 line 5).

As to claim 11, Kloth teaches the system of claim 8, wherein the marker engine is further capable of marking the packet with a low precedence value or a high precedence value based on the calculated probability when the number of tokens in the token bucket are between the first and second thresholds (see col. 9 line 52 – col. 10 line 9).

As to claim 12, Kloth teaches the system of claim 11, wherein the probability of marking the received packet with a low precedence is lowered when a previously received packet was marked with a low precedence (see col. 9 line 52 – col. 10 line 9).

As to claim 13, Kloth teaches the system of claim 8, wherein the number of tokens in the token bucket are inversely proportional to the amount of network traffic (see col.9 line 52 – col. 10 line 9).

As to claim 14, Kloth teaches the system of claim 13, wherein the probability of marking the received packet with a low precedence is inversely proportional to the number of tokens in the token bucket (see col.9 line 52 – col. 10 line 9).

As to claim 15, Kloth teaches a computer-readable medium having stored thereon instructions for a processor to execute a method, the method comprising:

receiving a packet (see col. lines 39 – 51);

determining a number of tokens in a token bucket (see col.3 lines 18 – 20); and

calculating a probability for marking the received packet with a precedence level when the number of tokens in the token bucket are between a first threshold and a second threshold (see col. 7 lines 23 – 36).

As to claim 16, Kloth teaches a system comprising:

means for receiving a packet (see col. lines 39 – 51);

means for determining a number of tokens in a token bucket (see col. 3 lines 18 – 20); and

means for calculating a probability for marking the received packet with a precedence level when the number of tokens in the token bucket are between a first threshold and a second threshold (see col. 7 lines 23 – 36).

As to claim 17, Kloth teaches a method, comprising:

receiving a packet (see col. lines 39 – 51);

determining a number of tokens in a first token bucket; determining a precedence value for marking the packet based on the determined number of tokens (see col. 3 lines 18 – 20); and

upgrading the determined precedence value to a higher precedence value when a pre-specified number of previously received packets were marked with the same determined precedence value (see col. 7 lines 23 – 36).

As to claim 18, Kloth teaches the method of claim 17, wherein the previously received packets were marked with the same determined precedence value in succession (see col. 9, lines 5 – 16).

As to claim 19, Kloth teaches the method of claim 17, wherein the precedence value is inversely proportional to the determined number of tokens (see 9 line 52 – col. 10 line 9).

As to claim 20, Kloth teaches the method of claim 17, further comprising determining a number of tokens in a second token bucket and wherein the determining a precedence value is based on the number of tokens in the second token bucket if the first token bucket has tokens less than a size of the received packet (see col. 7 line 66 – col. 8 line 5).

As to claim 21, Kloth teaches the method of claim 17, further comprising marking the packet with the determined precedence value or the upgraded precedence value (see col. 5 line 54 – col. 6 line 7).

As to claim 22, Kloth teaches a packet marking system, comprising:  
a receiving engine capable of receiving a packet (see col. 6 lines 39 – 51);  
a marker engine, communicatively coupled to the receiving engine, capable of determining a number of tokens in a first token bucket and capable of determining a precedence value for marking the packet based on the determined number of tokens (see col.3 lines 18 – 20); and an upgrade engine, communicatively coupled to the marker engine, capable of upgrading the determined precedence value to a higher precedence value when a pre-specified number of previously received packets were marked with the same determined precedence value(see col. 5 line 54 – col. 6 line 7).



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As to claim 23, Kloth teaches the system of claim 22, wherein the previously received packets were marked with the same determined precedence value in succession (see col.5 line 54 – col. 6 line 7).

As to claim 24, Kloth teaches the system of claim 22, wherein the precedence value is inversely proportional to the determined number of tokens (see col. 9 line 52 – col. 10 line 9).

As to claim 25, Kloth teaches the system of claim 22, wherein the marker engine is further capable of determining a number of tokens in a second token bucket and the marker determines a precedence value based on the number of tokens in the second token bucket if the first token bucket has tokens less than a size of the received packet (see col. 7 line 52 – 67).

As to claim 26, Kloth teaches the system of claim 22, wherein the marker engine is further capable of marking the packet with the determined precedence value or the upgraded precedence value (see col. 7 lines 23 – 36).

As to claim 27, Kloth teaches a computer-readable medium having stored thereon instructions to execute a method, the method comprising:

receiving a packet (see col.6 lines 39 – 51);

determining a number of tokens in a first token bucket (see col. 3 lines 18 – 20);

determining a precedence value for marking the packet based on the determined number of tokens (see col.7 lines 23 – 36); and

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upgrading the determined precedence value to a higher precedence value when a pre-specified number of previously received packets were marked with the same determined precedence value (see 5 line 54 – col.6 line 7).

As to claim 28, Kloth teaches a system, comprising:

means for receiving a packet (see col.7 lines 39 – 51);

means for determining a number of tokens in a first token bucket (see col.3 lines 18 – 20);

means for determining a precedence value for marking the packet based on the determined number of tokens (see col.7 lines 23 – 36); and

means for upgrading the determined precedence value to a higher precedence value when a pre-specified number of previously received packets were marked with the same determined precedence value (see col. 9 lines 52 – col. 10 line 9).

### ***Conclusion***

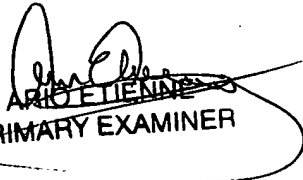
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sargon N. Nano whose telephone number is (571) 272-4007. The examiner can normally be reached on 8 hour.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sargon Nano  
Feb. 15 , 2007

  
ARIO ETIENNE  
PRIMARY EXAMINER